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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,158	05/10/2001	Atsushi Yamaguchi	109500	5938

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EXAMINER
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RENNER, CRAIG A

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/853,158

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Craig A. Renner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyauchi et al. (US 5,850,325).

Miyauchi teaches a thin-film magnetic head comprising a medium facing surface (as shown in FIG. 5, for instance) that faces toward a recording medium; a read head including a magnetoresistive element (200) and a first shield layer (400) and a second shield layer (311) for shielding the magnetoresistive element, the first and second shield layers having portions that are located in regions on a side of the medium facing surface and opposed to each other (as shown in FIG. 5, for instance), the magnetoresistive element being placed between the portions of the shield layers (as shown in FIG. 5, for instance); and a write head including a first magnetic layer (312) and a second magnetic layer (320) that are magnetically coupled to each other and include magnetic pole portions opposed to each other and placed in regions on a side of the medium facing surface (as shown in FIG. 5, for instance), each of the magnetic layers including at least

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one layer (as shown in FIG. 5, for instance); a gap layer (340) provided between the pole portions of the first and second magnetic layers; and a thin-film coil (330) at least part of which is placed between the first and second magnetic layers (as shown in FIG. 5, for instance), the at least part of the coil being insulated from the first and second magnetic layers (via 350); wherein the read head and the write head are placed such that one of the shield layers of the read head and one of the magnetic layers of the write head are opposed to each other (as shown in FIG. 5, for instance); the thin-film magnetic head further comprising a magnetism intercepting layer (313) provided between the one of the shield layers and the one of the magnetic layers, the magnetism intercepting layer having a thickness of 0.2  $\mu\text{m}$  or greater (lines 31-32 in column 6, for instance, i.e., "0.2  $\mu\text{m}$ ") and made of a nonmagnetic metal material that is capable of being formed through plating (lines 49-50 in column 7, for instance, i.e., at least one of "Ti" and "Ta", for instance, is capable of being formed through plating) [as per claim 1]; wherein the nonmagnetic metal material has a Vickers hardness of 400 or greater (lines 49-50 in column 7, for instance, i.e., each of "Ti" and "Ta", for instance, has a Vickers hardness of 400 or greater, specifically "Ti" is approximately 970 and "Ta" is approximately 873) [as per claim 2]; and wherein the nonmagnetic metal material is made of a single element that is not used for the one of the shield layers and the one of the magnetic layers (lines 49-50 in column 7 taken in conjunction with lines 13-15 and 23-25 in column 7) [as per claim 3].

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3. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Cates (US 6,445,537).

Cates teaches a thin-film magnetic head (300) comprising a medium facing surface (122) that faces toward a recording medium; a read head (102) including a magnetoresistive element (108) and a first shield layer (112) and a second shield layer (110) for shielding the magnetoresistive element, the first and second shield layers having portions that are located in regions on a side of the medium facing surface and opposed to each other (as shown in FIG. 9, for instance), the magnetoresistive element being placed between the portions of the shield layers (as shown in FIG. 9, for instance); and a write head (202) including a first magnetic layer (226) and a second magnetic layer (228) that are magnetically coupled to each other and include magnetic pole portions opposed to each other and placed in regions on a side of the medium facing surface (as shown in FIG. 9, for instance), each of the magnetic layers including at least one layer (as shown in FIG. 9, for instance); a gap layer (230) provided between the pole portions of the first and second magnetic layers; and a thin-film coil (332) at least part of which is placed between the first and second magnetic layers (as shown in FIG. 9, for instance), the at least part of the coil being insulated from the first and second magnetic layers (via 234, for instance); wherein the read head and the write head are placed such that one of the shield layers of the read head and one of the magnetic layers of the write head are opposed to each other (as shown in FIG. 9, for instance); the thin-film magnetic head further comprising a magnetism intercepting layer (94) provided between the one of the shield layers and the one of the magnetic layers,

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the magnetism intercepting layer having a thickness of 0.2  $\mu\text{m}$  or greater (lines 13-15 in column 8, for instance, i.e., "greater than approximately 0.2 micrometers") and made of a nonmagnetic metal material that is capable of being formed through plating (lines 25-28 in column 8, for instance, i.e., at least one of "chromium, iridium, rhodium, tantalum, titanium and tungsten" is capable of being formed through plating) [as per claim 1]; wherein the nonmagnetic metal material has a Vickers hardness of 400 or greater (lines 25-28 in column 8, for instance, i.e., at least one of "chromium, iridium, rhodium, tantalum, titanium and tungsten" has a Vickers hardness of 400 or greater) [as per claim 2].

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyauchi et al. (US 5,850,325).

Miyauchi teaches the thin-film magnetic head as detailed in paragraph 2, supra. Miyauchi, however, remains silent as to the nonmagnetic metal material being "platinum." Miyauchi does however teach that "other metals... may be used" (lines 50-52 in column 7, for instance).

Official notice is taken of the fact that platinum is a notoriously old and well known metal in the thin-film magnetic head art. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the nonmagnetic metal material of Miyauchi be platinum. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the nonmagnetic metal material of Miyauchi be platinum since Miyauchi suggests that other metals may be used and since platinum is a notoriously old and well known metal in the thin-film magnetic head art. Selecting a known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960).

#### ***Pertinent Prior Art***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes Sasaki (US 6,504,686), which teaches a thin-film magnetic head further comprising a magnetism intercepting layer formed between a lower pole and an upper shield, the magnetism intercepting layer having a thickness of 0.2  $\mu\text{m}$  or greater and made of a nonmagnetic metal material that is capable of being formed through plating.

#### ***Response to Arguments***

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (703) 308-0559. The examiner can normally be reached on Tuesday-Friday 7:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



Craig A. Renner  
Primary Examiner  
Art Unit 2652

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